

O86- Is place-kicking performance in rugby a matter of routine: A Critical Review

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Place-kicking in rugby is a skill that offers a natural laboratory in which to understand performance routines. It is argued that the traditional paradigms under the cognitive psychology umbrella (Singer, 2000) that have investigated routines in this sport have been naïve and limited in their approach. For instance, ecologically valid research on the temporal characteristics of routines in rugby is inconsistent with the long held idea that temporal consistency was vital in their efficacy (Jackson & Baker, 2001). The emerging field of “motor cognition” (Jeannerod, 2006) may provide an appropriate paradigm to explore routines. Exploring metacognitions of performers with qualitative approaches, engaging in motor imagery of the skill with dual-task paradigms and expanding upon our conceptualisation of routines in rugby, may all elucidate the processes underlying elite level performance on this skill.

Keywords: Rugby, Routines, Motor Cognition, Metacognition, Imagery

In the 2007 Rugby World Cup, over 296 kicks contributed to the outcome of the 48 matches. On October 23rd, 2011, one team will have been victorious in the Rugby World Cup final and undoubtedly, place-kicking performance will have influenced to the outcome. This skill has been of interest to researchers in a variety of fields, including biomechanics (Bezodis, Trewartha, Wilson, & Irwin, 2007) and sport psychology (e.g., Jackson & Baker, 2001). The reason for such interest in the phenomenon of place-kicking is not merely because of the consequences for the outcome, but because they are habitually accompanied by pre-performance routines. Pre-performance routines are systematic sequences of preparatory thoughts before important skills (Moran, 2011). Researchers have typically focused on their application in golf (Cotterill, Sanders, & Collins, 2010) and soccer (Jordet, 2009). One aspect of routines that has particular interest for researchers is the nature of the environment in which they occur. To explain, Singer (2000) describes a self-paced act as those taking place in a relatively stable and predictable environment, where there is adequate time to prepare for the motor execution. Both the free-throw (in basketball) and a penalty shot in soccer are referred to as *self-paced tasks*, the former could be categorised as a closed-skill, whereas the latter may be described as being a semi-closed skill (Gentile, 1972). Interestingly, a place-kick in rugby could be categorised as a semi-closed skill because of the minor variations in the environment which include possible wind, surface changes and the fact that, for example, a conversion may be challenged by an opposing player once the run-up has commenced. Two other issues make the place-kick in rugby unique: (1) penalties can be awarded from anywhere on the pitch (e.g., even in their own half) and (2) the IRB rules stipulate a 1 minute time-limit for the kick. Thus task difficulty can vary (i.e., depending on the distance and the angle of the kick) and the player has time for preparatory activities such as a pre-performance routine. Given these task demands, it is not surprising that several studies have explored this skill from both a qualitative and a quantitative perspective. Two seminal studies include a case-study and an analysis of World cup Rugby place-kicking performance (Jackson & Baker, 2001; Jackson, 2003). The findings showed little support for the accepted view that temporal consistency in routines led to improved performance. Unfortunately, despite this interest in place-kicking skills, the research has been largely atheoretical. Furthermore, models that account for performance routines (e.g., Singer, 1988) are largely descriptive. For instance, the five-step model developed by Singer (1988) which, attempted to account for motor, emotional and cognitive processes underlying routines, does not explain the idiosyncratic nature of routines that case studies reveal (Jackson & Baker, 2001). Furthermore, this model does not make explicit predictions for the efficacy of the sub-components of routines (e.g., what are the most important aspects of a routine) nor is their any attempt to understand how routines are acquired, maintained and refined. Therefore, what is required is a new perspective with both

conceptual and methodological innovations. The emerging field of ‘motor cognition,’ which is concerned with understanding the representation of action and associated cognitive processes (Jeannerod, 2006), may provide an appropriate paradigm to explore routines. In essence, Jeannerod postulated that imagery, the (covert) representation of action, occurs on a continuum with execution of the (overt) action, and motor imagery. In embodied cognition approach, motor preparation may be as important to investigate as motor execution. The motor cognition approach means we can explore the role of imagery in motor preparation for a skilled action. A dual-task paradigm during the pre-performance routine and subsequent movement execution can shed light on the underlying processes in both motor preparation and motor execution. A similar approach has been employed to look at the peak attentional demands in a free-throw task (Price et al., 2008). Furthermore, it may be possible, for example, to selectively interfere with the kinaesthetic element of a routine and subsequently measure the impact on the both the duration of the routine and the accuracy of the place-kick. Another line of enquiry is the exploration of meta-attention or people’s insights into and control over their own attentional processes (Moran, 2011) and meta-imagery (see Moran, 2009). Consequently, the above experimental approach could be augmented by qualitative approaches which may prove useful in understanding the metacognitive processes of elite performers.

Future research should employ a motor cognition perspective in order to develop more accurate insights, and explanations of the processes underlying skilled action (Moran, 2009). Dual-task methods combined with think-aloud protocols and qualitative approaches may elucidate the processes underlying expert place-kicking performance.

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